Sharpe's Akalat *Sheppardia sharpei*
(Mt Nilo Forest Project)

White-crested Alethe *Alethe fuelleborni*
(Mt Nilo Forest Project)

Crested Flycatcher *Trochocercus cyanomelas* (Mt Nilo Forest Project)

Project Mount Nilo '95 Discoveries in the East Usambara and Nguu Mountains, Northern Tanzania

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Mount Nilo Catchment Forest Reserve: forested ridge at dawn (Mt Nilo Forest Project)

In July–October 1995, Project Mount Nilo '95, a conservation expedition organised from the University of Cambridge, UK, surveyed forest birds and mammals in northern Tanzania. The project assessed the ecological requirements and threats to the survival of restricted-range and globally threatened bird species in remnant patches of submontane forest in the East Usambara and Nguu Mountains. We recorded a total of 130 bird species, including five threatened and three near-threatened species, and ten endemic to the forests of the Eastern Arc Mountains. We also recorded 22 species of mammals, two of which are considered threatened.

In both mountain ranges, much submontane forest remains unprotected and even areas within the reserves are subject to degradation. There is an urgent need for an effective long-term conservation programme, not only to help secure the survival of these threatened species, but also to preserve the catchment forest on which many local people ultimately depend for water. We recommend that Mount Nilo and Nguru North Catchment Forest Reserves should be considered for designation as Important Bird Areas, and suggestions for their future management are presented in this paper.

Introduction

The montane forests of East Africa harbour a rich and unique biological community. They comprise an archipelago of isolated habitats, where relative stability over a long period of evolutionary time has enabled the persistence and differentiation of relict populations, leading to high levels of endemism. This has been well demonstrated in birds, and the area has been identified as an Endemic Bird Area (EBA C24) accordingly[11]. The EBA supports 29 restricted-range bird species of which 25 are endemic to the Eastern Arc Mountains, including the endemic monotypic genera *Modulatrix* and *Scepomycter*[16]. Of these restricted-range species nine are listed as threatened and two as near-threatened[3].

These forests have been exploited by man for 2,000 years, but since the mid-1960s there has been rapid deforestation and habitat degradation through a big expansion of subsistence agriculture, and large-scale logging operations[9]. While great emphasis has been placed on the conservation of large mammals

Figure 1 Map of Tanzania

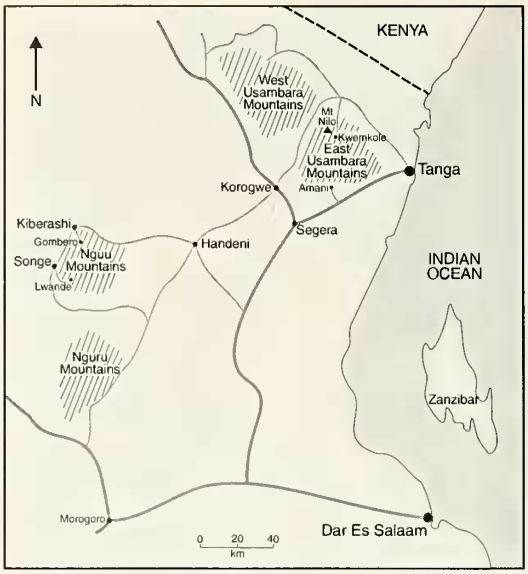

Figure 2 Location of the East Usambara and Nguu Mountains

and their lowland savannah habitat in Tanzania, the protection of montane forest has been relatively limited. For example, the critically important forests of the Usambara, Uluguru and Nguru Mountains only have Catchment Forest Reserve (CFR) status, which does not sufficiently protect the forest from resource exploitation and manipulation[13]. However, these forests are of fundamental importance, not only in terms of their biodiversity and their value as a genetic resource, but as environmental buffers, catchments for water, and sources of many forest products on which local people depend.

Project Mount Nilo '95 was an undergraduate conservation project from the University of Cambridge, UK. Our aim was to investigate the ecological requirements and the threats to the survival of the birds and mammals, in order to promote their conservation. With the assistance and support of the Wildlife Conservation Society of Tanzania and the East Usambara and Tanga Catchment Forest Projects, we spent July–October 1995 surveying the birds and mammals of two CFRs in two semi-isolated ranges in the Eastern Arc Mountains: Mount Nilo CFR in the East Usambara Mountains and Nguru North CFR in the Nguu Mountains (Figure 1). Using standard expedition methodology[15], eg general field observations, mist-netting, sound-recording and spot-lighting, we focused on assessing the conservation status and ecological requirements of restricted-range bird species[16] and those listed as globally threatened and near-threatened[5] in these two areas.

The East Usambara Mountains

The Usambara Mountains are located in the Tanga region of north-eastern Tanzania. Separated by the Lwengera valley they divide into the East Usambaras and the considerably larger West Usambaras. The East Usambaras are a steeply scarped, deeply dissected plateau between 900 m and 1,050 m with a peak (Mount Nilo) at 1,506 m.

The East Usambaras possess one of the most diversified floras and faunas in Africa[10], and their biological importance is well documented having first been brought to international attention by the works of Barbour and Loveridge[1], Moreau[12], and more recently by Stuart and van der Willigen[17]. Of those threatened bird species endemic to the Eastern Arc Mountains, five are known from the East Usambaras[3]. While the avifauna of the East Usambara lowlands was recently surveyed by the Cambridge Tanzanian Rainforest Project[2], that of the highlands is poorly known. Mount Nilo is the highest peak in the East Usambaras, yet prior to our visit in 1995 Mount Nilo CFR contained the least-studied submontane forest in the range: Moreau visited the area briefly in 1931[14], and Cordeiro and Kiure[6] conducted a ten day survey in 1994.

In July 1995, we surveyed both the Lutindi and Kilanga regions of Mount Nilo CFR, where fieldwork was largely concentrated in relatively pristine submontane forest at 1,000–1,500 m. Working from two base camps we recorded a total of 91 species of birds, including 18 species of conservation interest[15]. Of particular importance were four globally threatened species: the highly elusive 'Usambara' Eagle Owl *Bubo poensis vosseleri* whose call was heard between midnight and 00.30hr on three consecutive nights, Banded Green Sunbird *Anthreptes rubritorques* for which we had 11 records in fairly degraded forest edge habitat at 900–1,200 m, Amani Sunbird *Anthreptes pallidigaster* a pair of which was observed in a clearing at 1,250 m, and Tanzanian Mountain Weaver *Ploceus nicolli*, occasionally seen in amongst mixed-species flocks in the canopy of mature trees in both intact and degraded forest. Until it was observed just outside the CFR in 1994[6], Tanzanian Mountain Weaver had not been recorded in the East Usambaras since 1932 when it was last seen at Amani[14]. Mount Nilo CFR is very likely to represent the last remaining stronghold in the East Usambaras for the nominate race. The two restricted-range threatened species not recorded were Dappled Mountain Robin *Arcanator orostruthus* and Long-billed Tailor-bird *Orthotomus moreaui*. While it is possible that the fomer species was overlooked, the lack of records in 1994[5] and 1995 indicate that despite the presence of suitable habitat this spe-

Yellow-rumped Tinkerbird *Pogoniulus bilineatus*
Christine Isherwood

cies is genuinely absent from Mount Nilo CFR. Two Long-billed Tailor-birds were observed just outside the Mount Nilo CFR in degraded public land by Cordeiro and Kiure in 1994[5], but the lack of sightings in 1995 suggest that the species is rare in Mount Nilo CFR.

Other records of conservation interest included two near-threatened species: Southern Banded Snake Eagle *Circaetus fasciolatus*, which was observed soaring over and briefly perching in the canopy above 1,100 m, and the vociferous, gregarious and very commonly encountered Fischer's Turaco *Tauraco fischeri*. In addition, six restricted-range species were recorded within the reserve: 'Mombasa' Woodpecker *Campethera abingoni mombassica*, White-chested Alethe *Alethe fuelleborni*, which while rarely seen in the field was very commonly netted in intact submontane forest, the skulking Sharpe's Akalat *Sheppardia sharpei*, Red-capped Forest Warbler *Orthotomus metopais*, the extremely shy and retiring Spot-throat *Modulatrix stictigula* whose plaintive two-note whistling call was a dominant sound throughout the reserve, and the easily overlooked and strictly arboreal Kenrick's Starling *Poeoptera kenricki*. Other species of note included the seldom-recorded African Green Ibis *Bostrychia olivacea*, known from the forests of East and West Africa, Tiny Greenbul *Phyllastrephus debilis*, which was commonly recorded in mixed species flocks in the understorey, and Green-headed Oriole *Oriolus chlorocephalus* which was uncommonly observed in the canopy, all three of which were considered as candidates for threatened status[4]. Finally, Uluguru Violet-backed Sunbird *Anthreptes neglectus*, once classified as near-threatened[4], was observed on six occasions in the understorey of forest-edge and degraded habitat.

Despite much time and effort, we recorded only nine species of large mammal which strongly hinted that hunting pressures were high. These included two that are considered to be globally threatened with extinction[8]: Giant Elephant Shrew *Rhynchocyon cirnei*, often seen moving through the undergrowth in its highly distinctive bounding fashion, and the extremely vocal Tree Hyrax *Dendrohyrax arboreus*.

Despite its status as a reserve, Mount Nilo CFR is being degraded mainly through pole and firewood collecting and cardomon cultivation, problems that are likely to worsen as population pressure grows. Although pit-sawing seemed minimal within the CFR, this was mainly due to the existence of mature trees in the adjacent public land, and once this resource is exhausted logging activities may encroach into the reserve itself. Our discussions with villagers revealed that most pit sawing is conducted by people from outside the area and the industry brings little revenue to the local communities. Many seemed extremely concerned by the rate of habitat degredation, and responded well to suggestions of pole plantations.

The Nguu Mountains

The Nguu mountains are located in the Tanga region of north-eastern Tanzania. They lie mainly between 860 m and 1,550 m and comprise several peaks and north-south ridges on the eastern edge of the Maasai steppe. Acting as an important catchment for eastern Maasailand, Nguru North CFR is the largest of the nine reserves that cover the forest of the Nguu Mountains, but it remains biologically very poorly known.

Forest Batis *Batis mixta*
(Mt Nilo Forest Project)

In August and September 1995, we gathered the first avifaunal information for the mountain range, carrying out survey work in submontane forest at 1,000–1,550 m in both the northern and southern regions of the Nguru North CFR. We recorded 97 species of birds, of which nine are of conservation interest. These included the globally threatened East Coast Akalat *Sheppardia gunningi* and Banded Green Sunbird, both of which were regularly recorded. The skulking, ground-haunting akalat was common (51 field records and 21 net records) in the dense undergrowth of intact submontane forest at 1,140–1,500 m. Our records of this species represent a new locality and an altitudinal range extension of 700 m in Tanzania. The East Usambaras lowlands were previously considered to have the largest population of this species[7], but our records suggest that the Nguus may well hold a significantly larger population. It seems that this species is less threatened with extinction than previously thought, and although accurate population estimates in the Nguus are needed, the species may better be classified as near-threatened[15]. Two pairs of Banded Green Sunbird were observed in forest-edge habitat, the female gathered nesting material while the male apparently guarded her and sung from exposed perches. Other records of conservation interest included those of two near-threatened species: Southern Banded Snake Eagle and Moreau's Sunbird *Nectarinia moreaui*, a pair of which were regularly observed in forest-edge at 1,500 m, feeding on nectar of flowering climbers, and the restricted-range White-chested Alethe and Kenrick's Starling. In addition, Tiny Greenbul and Uluguru Violet-backed Sunbird were relatively uncommon sightings, while Green-headed Oriole, the melodious song of which was a ubiquitous sound in the forest, was abundant.

Red-capped Forest Warbler *Orthotomus metopais*
Christine Isherwood

In terms of its mammal fauna, the Nguus proved extraordinarily rich. Twenty species were recorded in the field, including at least three species of bushbaby *Galago/Galagoides* spp, Blue Monkey *Cercopithicus mitis*, three species of squirrel including an undescribed *Funisciurus* sp, Leopard *Panthera pardus*, Two-spotted Palm Civet *Nandinia binotata*, Porcupine *Hystrix* sp, Red River Hog *Potamochoerus porcus*, African Buffalo *Syncerus caffer*, two species of duiker *Cephalophus* spp., and two globally threatened species[8]: Giant Elephant Shrew and Tree Hyrax.

Population pressures on the forests of the Nguus are less than those on the East Usambaras, and hunting appeared minimal. However, the habitat is being severely degraded through pole collecting and pit-sawing, and the latter is likely to be exacerbated when the road, currently being constructed south of the reserve, is completed

Conclusions and recommendations for conservation

The forests of the Eastern Arc Mountains comprise immensely rich and unique biological communities, and our results are testimony to this. However, the project confirmed the fact that these forests are subject to intense degradation and that there is an urgent need for an effective, long-term conservation programme. Such a conservation programme must include three main components: protection of habitat, improvements in current farming practices, and environmental education and publicity.

Central to the success of any conservation scheme is community involvement. In 1995 we found that there is a growing realisation within the local communities that forest is an essential resource, and there is much concern over the fact that this resource is diminishing. The local people seemed willing to get involved with sustainable forest management, and to start alternative schemes such as pole plantations.

We have therefore recommended that the both reserves should be designated Important Bird Areas, and have suggested that several measures should be taken in order to safeguard the future of these bird and mammal species and to protect the catchment forest upon which the local community depend for water. Measures include more effective demarcation of the reserve boundaries, cessation of pit-sawing activities, restriction of pole-cutting, an investigation into the potential for enhanced farming efficiency, and the initiation of environmental activities in the villages adjacent to the CFRs so as to protect the reserve and

lay the basis for sustainable development in the future[15]. Encouragingly, we have recently learned that in response to our recommendations, the Tanga Catchment Forest Project has initiated an education programme in the villages adjacent to Mount Nilo CFR.

Finally, we strongly recommended that considerably more biological research is carried out in the rest of the Nguu mountain range, especially within those CFRs next to Nguru North CFR. These areas are very likely to hold further populations of threatened birds, mammals and plants, and considerably more publicity should be given to this important area, both within Tanzania and internationally.

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